INTRODUCTION

The *1997 Texas Epidemiologic Profile for HIV Prevention Planning* was created to support the twin processes of selecting and prioritizing the subpopulations to be targeted for state and federally-funded HIV-prevention activities. The community planning process has two hallmarks: it is data-driven and it is overseen by volunteer community stake holders. The goal of this Epidemiologic Profile is to present summaries of the most relevant, complete, and recent information on disease trends. It is an academic exercise or a comprehensive look at all possible data peripherally related to the HIV epidemic in Texas. Because of the charge and scope of the community planning process, we have included information on only adolescents and adults in this profile; we have also omitted information on vertical transmissions (from mother to child).

Road Map: How the Profile is Organized

As you look over this bulky book, you will see that it falls into several sections. You have epidemiologic profiles for the state and for each Public Health Region (PHR) here in one volume. Here is a summary of what you will find in your binder.

Introduction: The first section, the one you are currently reading, is the Introduction. It contains guidelines for using the profiles as well as a glossary of epidemiologic terms and acronyms. You may find it useful to pull the glossary and the lists of acronyms out of your binder when you first start reading your profiles.

Methods of Analysis: This section tells why we chose the analysis groups we did--why we picked the age groups, race/ethnicity groups, and mode of exposure groups.

Sources of Data: This section gives information about each source of data included in the profile, showing its strong and weak points.

Summary of Strengths and Weakness of Data: This is also a good pull-out section to keep handy while reading your profiles.

*AIDS Trend*s: This section shows trends in AIDS for Texas from the late 80's to 1995. It also gives examples of how case counts, proportions, and rates are used to describe the changing profile of AIDS in the state.

State Profile: The state profile begins with a summary and then provides a detailed look at the information on STDs, HIV, and AIDS for the state overall.

State Appendix: Even further detailed information on STDs, HIV, and AIDS for the state overall.

Regional Profiles: These follow the state profile--PHR 1 through PHR 11. The first thing in each regional profile is an epidemiologic summary of the region, followed by a detailed look at your region's profile. You will see information on the general population in your region, followed by an overview of HIV and AIDS in your region. The next section is the heart of the profile, containing detailed information on Behaviorally-Defined Target Population (BDTP)-related modes of exposure. Each of the modes contains an estimate of the size of that risk population and detailed AIDS case and HIV Counseling and Testing System (CTS) information for that mode of exposure. The final section in the regional profiles contains data which cannot be broken down by mode of exposure (e.g., STD reporting and Survey of Childbearing Women).

Regional Appendices: The appendix for each region follows that region's profile. It contains very detailed tables of information on STDs, HIV, AIDS, and TB in the region, as well as some data on needle-sharing populations in each region.

Supplemental Information: This section contains information which may help further illuminate the profiles (e.g., summaries of seroprevalence studies, summary reports on substance use trends and the Behavioral Risk Factor Surveillance System, and copies of surveillance forms).

We suggest that you approach this profile in the following way:

First: Skim the *Introduction, Methods of Analysis, Sources of Data,* and *AIDS Trends* sections. If you have questions on data sources or analysis methods, you can read those parts of these sections in detail.

Second: Read the executive summaries for the state and for your region.

Third: Read your regional profile--TWICE! The first time around, just read. The second time around, make notes and add questions.

Fourth: Skim the state profile.

Fifth: Discuss the profile with other community planning group members--what are your questions, needs for clarifications, and insights about this information.

Guidelines for the Use of Information

Understand what you are looking at.

What does the information cover?

Does it represent HIV infections or AIDS cases?

Do the numbers represent new cases or cumulative numbers?

Know the limitations of the information sources.

How complete is the data?

Does the information represent the general population or just a select subgroup?

Don't overinterpret the information.

Increases or decreases in small numbers are magnified when calculated on a proportional basis.

Use the data.

Don't be scared off by the limitations of the data: use it.

Look for consistencies between different sources of information.

Results are more believable if they are supported by multiple sources.

Mode of Exposure and Risk Behaviors.

Don't confuse *mode of exposure* and *risky behavior* (See next page).

Risk Behavior and HIV Prevalence.

Be careful about defining the *potential* for spread of disease versus the *presence of HIV* in that population. It takes both.

Case Reporting.

Are you looking at cases by *year of diagnosis* or *year of report*?

Measures.

Are you looking at a *rate*, a *count* or a *percentage*?

Are you looking at *incidence* or *prevalence*?

Commonly Used Epidemiologic Terms

Case: An instance of a disease that matches the criteria set by a health authority for inclusion in the official disease count.

Case Definition: The criteria defining a disease or condition. You must be aware that these definitions change and that the change may alter the data collected and the interpretations (for example, the change in the AIDS case definition in 1993).

Count/Number: An amount of something (15 AIDS cases in Travis County over the last 5 years; 105 Testing sites in the community).

Demographic: Ways to describe people (race, ethnicity, sex, age)

Geographic: The place where something happens (city, county, region)

Incidence: The number of *new* cases of a specific disease in a certain place during a certain time period. This information is rarely available for HIV infections.

Mode of Exposure: Derived from risk behavior, but not the same. A risk behavior is something a person does that may bring them into contact with HIV and lead them to become infected. People often engage in more than one kind of risk behavior. The mode of exposure indicates which risk behavior had the highest probability of being the route of infection. However, these probabilities are based on the likelihood of transmission given a single instance of the risk behavior. Any occurrence of the behavior since 1978 counts. How *often* or how *recently* people have put themselves at risk is not taken into account.

Percent Increase or Decrease: The rate of change between one time period and another earlier time period. For example, if 20 AIDS cases were diagnosed in 1992 and 80 were diagnosed in 1995, the calculation looks like this: 80 - 20 = 60; 60 ÷ 20 = 3; 3 X 100 = 300%. The number of cases increased 300% from 1992 to 1995. Here's another example: 50 P&S syphilis cases were reported in 1992, but only 10 were reported in 1995. The calculation looks like this: 10 - 50 = -40; -40 / 50 = -.80; -.80 X 100 = -80%. The number of cases decreased 80% from 1992 to 1995. Note that you can have huge percent increases but you can never have over a 100% decrease.

Percentage Point Change: Yesterday Jane got 34% of the pie. Today Jane got 35% of the pie. The percentage point change was +1%. Note that this is different than percent increase or

decrease (which tell you about the *rate of change*). What percentage point change tells you is how much bigger or smaller Jane's *share* of the pie was today compared to yesterday. Note also that you do not know how big the pie was yesterday *or* today. So, unless you have numbers (for example you know the pie was a 3-inch pie yesterday but a 9-inch pie today), you really don't know if Jane got more or less pie today, you only know she got a bigger share of it.

Prevalence: The number of *existing* cases of a disease in a certain place at a point in time or during a period of time. HIV prevalence usually has to be estimated. Direct measurement is not feasible because the issues surrounding HIV lead to so much bias in sampling or counting that you cannot trust the results.

Proportion, percentage: A share of something. (20 of 25 cases [80%] reported in 1995 were male). You should know the size of the total when you use these. Also keep in mind the following principle. Joe, Mary, and John share a pie today and a pie tomorrow. If Mary gets a bigger share tomorrow than she did today, then *someone else* (either Joe or John or both of them) is going to get a smaller share tomorrow.

Rate: How often something happens in relation to the population it happens in per unit of time (100 AIDS cases per 100,000 males in Adams County in 1995). In order to use rates effectively, you must keep in mind the size of numerator and denominator.

The *kind* of data used are also important. For example, in CTS data, positivity rates are calculated like this: 25 positives in the group divided by 100 valid tests in the group times 1,000 (25/100 X 1,000 = 250 per 1,000 tests). In this case the CTS system provides its own denominators: *valid tests*. If those tested are representative of the general population, then you might make generalizations to a broader population. We do not think CTS data are representative of the general population. Nonetheless, CTS data are extremely relevant to HIV prevention efforts in that they often capture people likely to be at increased risk.

In other instances a rate may be calculated from data that do *not* provide their own denominators. For example, AIDS case rates are calculated like this: 25 AIDS cases in the group divided by the *estimated general population* of 400,000 in the group times 100,000 (25/400,000 X 100,000 = 6.3 per 100,000 estimated general population). The hidden assumption here is that AIDS case reporting is fairly complete and that it *does represent* AIDS cases in the general population.

Reporting Delay: How much time goes by between the date a person is diagnosed with a disease and the date that person's disease is reported to the health authority.

Risk Behavior: This is a behavior which increases the chance of contact with the infectious agent (HIV). These include all behaviors in which the exchange of body fluids occurs. For more discussion of HIV risk behaviors, read the Mode of Exposure entry above.

Seroprevalence: The number of existing cases of a disease identified from antibody tests on blood serum taken from limited populations. The populations tested are limited but the information reflects actual rates, rather than estimates for this limited population.

Year of Diagnosis: This is the year that the diagnosis is made. For AIDS cases, it is the year that the doctor has confirmed the diagnosis.

Year of Report: This is the year in which the case is reported to TDH. For AIDS cases, this is the year in which TDH receives the confirmed diagnosis and completes the entry into the AIDS database.

Glossary of Acronyms

AIDS	Acquired Immunodeficiency Syndrome
BDTP	Behaviorally-Defined Target Population (M/MS, IDU, F/MS)
CD4 +	White blood cells with receptors for which HIV virus has an affinity
CDC	Centers for Disease Control and Prevention (Federal Agency)
CODAP	Client-Oriented Data Acquisition Process (TCADA)
CTRPE	Counseling, Testing, and Referral and Partner Elicitation
CTRPN	Counseling and Testing and Partner Notification
CTS	HIV Counseling and Testing System
EPIGRAM	A TDH software which has Texas A&M yearly population estimates.
F/MS	Female with male sexual activity
HIV	Human Immunodeficiency Virus
HRSA	Health Resources and Services Administration (Federal Agency)
IDU	Injecting drug use
M/MS	Male with male sexual activity
M/MS/IDU	Male with male sexual activity and injecting drug use
NIR	No Identified Risk
OI	Opportunistic Infection
P&S	Primary and Secondary Syphilis
PCPE	Prevention Counseling and Partner Elicitation
PHR	Public Health Region
SCBW	Survey of Childbearing Women
SHAS	Supplemental HIV/AIDS Surveillance Study
STD	Sexually Transmitted Disease
TB	Tuberculosis
TCADA	Texas Commission on Alcohol and Drug Abuse (State Agency)
TDCJ	Texas Department of Criminal Justice (State Agency)
TDH	Texas Department of Health (State Agency)
TSDC	Texas State Data Center (Texas A&M)
UI	Unique Identifier (using numbers, not names)

METHODS OF ANALYSIS

In the *Overview* of your region, information on HIV and AIDS will be shown by race/ethnicity, age group, sex, and mode, as appropriate or as possible. In the *BDTP-related sections*, the information is broken down by 4 modes of exposure (M/MS, M/MS/IDU, IDU, and F/MS). Within these modes of exposure, most data are presented by race/ethnicity, age group, and sex.

Years Chosen

In these profiles, you *usually* will see analyses for two years: **1992** and **1995**. Occasionally we will refer to other years. For example, the estimates of HIV prevalence are for 1994, not 1995 (the sample size of the 1995 SCBW was too small to be used for regional estimates). In the section called *Texas AIDS Trends*, we show graphs with data tables for AIDS cases diagnosed from 1985 through 1995. For most data sets in the profiles, we chose 1992 and 1995 for the purposes of comparisons over time, but for CTS data we provide only 1995 information. Although much of the 1996 data are now available, not all of it was ready in time to include in the analysis, so we chose to keep the years as consistent as possible. The use of 1995 data instead of 1996 data should not seriously affect planning. We will give an abbreviated update using 1996 data next year to be sure you have timely information.

Race/Ethnicity Groups

The need for yearly population estimates to calculate case rates leads to a limitation in the number of race/ethnicity groups used in the profiles: the available population estimates have numbers for only 4 race/ethnicity groups: whites, African Americans, Hispanics, and *Other* races and ethnicities combined (Native Americans, Asians, Pacific Islanders, and many others).

Age Groups

For most data sets we used the following age groups:

- 13-19
- 20-29
- 30-39
- 40 +

We gave information on age in ranges intended to be useful to community planning groups but still standardized to the way most other information on HIV and AIDS is presented (for example, by not splitting the ages into groups like 13-15, 16-21, etc). For this reason, you probably can compare these data to data from other areas, to journal articles, and to CDC publications dealing with AIDS, HIV, and STDs on the national level. Most of the information presented in the profiles excludes people under the age of 13. However, this is not always true. For example, the HIV prevalence estimates had to be done on the basis of *all* age groups.

Sex

The age of the people represented in these data often determines how we describe the sexes. If we are discussing a data set that excludes people 0-12 years old, we usually say *Men* and *Women* in the text, tables, and graphs. However, if children have *not* been excluded, we usually use the terms *Males* and *Females*. The only exception to this is the terms used for three of the BDTP-related modes of exposure: *male with male sexual activity*, *male with male sexual activity* ***and*** *injecting drug use*, and *female with male sexual activity*. All discussions of modes of exposure are based on data on people age 13 or older.

Geography

Most of the information is presented at the level of the 11 Public Health Regions and at the state level. Data from Hardin, Jefferson, and Orange Counties were removed from PHR 5 and put in PHR 6 for community planning purposes. You will find some county-level information and some zip code level information in the Appendix for your region.

Modes of Exposure

We use four major modes of exposure in this profile: M/MS (male to male sex), M/MS/IDU (male to male sex with injection drug use), IDU (injection drug use) and F/MS (risky female to male sex). Remember that modes of exposure are constructed from risk information. Some people have engaged in only *one* kind of risk behavior. Others have engaged in *many* kinds of risk behaviors. Also, remember that risk information is collected in terms of the person having engaged in the behavior *at any time since 1978*. What this means is that it is unknown *how often* or *how recently* the risky behavior took place. But for the purposes of statistical analysis, we have to be sure that each case or testing session gets counted only once. For this reason, people with multiple risks are assigned to the mode of exposure considered to carry the highest risk of

transmission of HIV.

AIDS cases, seroprevalence data, and CTS data have similar modes of exposure. All these data sets use a hierarchy of HIV transmission risk probabilities to assign people with multiple risks to only one mode of exposure category. Unfortunately, they differ in some of the risks that are collected and in the modes of exposure that are derived from those risks. **M/MS**, **M/MS/IDU**, and **IDU** are done the same way in both data sets. However, the way the **F/MS** mode of exposure is constructed differs across these types of data.

In ***AIDS case information***, the mode **F/MS** is used to denote female with male sexual activity in which the sex partner *already has HIV* or the partner is at *increased* risk for HIV infection due to underlying behaviors.

For example, if it can be *confirmed* that a man had sex with a woman who injected drugs (and if he had engaged in no higher-precedence risk behaviors), his AIDS case is put into the risky heterosexual sex **(F/MS)** mode of exposure.

But, if he had sex with 400 women and it could *not be confirmed* that any of the women were high-risk partners (for example, that they injected drugs or they already had HIV), his case first would be categorized as No Indicated Risk. After investigation, if no other risk factor were found, his case would end up in the ***Other*** mode of exposure category.

However, due to the hierarchy being based on *one-time* HIV transmission probabilities, if he injected drugs *once* in 1980 and had sex with 400 women with HIV since 1978, his AIDS case would be *not* be assigned to the F/MS mode of exposure. Instead, his case would go in the **IDU** mode. In the hierarchy, injecting drug use is considered riskier than high-risk female with male sexual activity.

In CTS information, the mode **F/MS** is constructed differently. The CTS mode F/MS has been constructed for community planning purposes and it does not exist in standard CTS analysis. This mode includes individuals who fell into the following separate modes: *STD diagnosis; sex partner of bisexual male; sex partner of IDU; sex partner of individual with HIV/AIDS; sex while using non-injecting drugs, sex partner with other HIV/AIDS risk*, and *trading sex for money or drugs*.

CTS data also contain two additional modes of exposure which are not directly relevant to community planning purposes:

- **Other Risk** - individuals who do not fit into the above categories but are at risk of getting HIV/AIDS through another avenue (combining the modes *Child of woman with HIV/AIDS,*

Hemophilia/blood recipient, Victim of sexual assault, Health care exposure, and *Other*).

- **No Specified Risk** mode - individuals who do not fall into any of the above categories and still wish to be tested (combining the modes *No Indicated Risk* and *Not specified)*.

There will be little discussion of the last two modes of exposure. However, detailed information on these modes may be found in the regional appendices.

Risk

The risk of becoming HIV infected is largely determined by the *number of times* a person practices a high-risk behavior, *how risky* the behavior actually *is* (some are riskier than others), and the *level of HIV prevalence* in that person's intimate community. Our data systems do not capture how often or how recently a risk is practiced.

Demographics, modes of exposure (derived from risk information), and risk information are all useful in helping to identify those groups which are at highest risk of becoming infected.

In the CTS data, we have presented both *mode of exposure* information and information about *risk behaviors*. An explanation of how risk behaviors are assigned to a mode of exposure category can be found in the *Data Sources: HIV Counseling and Testing (CTS)* section. We have not presented risk information for AIDS cases.

For all data sets, note that all of the behaviors included in **F/MS** incorporate activities which involve direct **risk** for HIV transmission (e.g., sex with IDU). In the CTS data, activities which act to facilitate other **risky** behaviors (e.g., substance use, STD diagnosis) are also included in F/MS. Remember that in all the data M/MS/IDU, M/MS, and IDU are all *higher* in the hierarchy than modes which emphasize **risky** heterosexual sex only. This means that all the men in the **F/MS** mode reported no male sex partners and reported no injecting drug use; the women in this category are sexually active heterosexuals who are not IDU. In the CTS data, if a client's only risk is heterosexual sex, and her/his partner is not a gay or bisexual man, an IDU, or a person living with HIV/AIDS, and the client does not disclose substance use, sex trade, or an STD diagnosis, they will usually be placed in the ***Other*** Risk mode, which was described in the section on Modes of Exposure, above.

SOURCES OF DATA

We have used many sources of information to develop this report. These data sources have been developed for specific purposes other than community planning and are not a perfect match for your needs. Because no comprehensive data source for HIV/AIDS information exists, we have provided additional information sources such as STDs, drug abuse, and special surveys. These additional data may indicate the presence of risk behaviors or situations where the population might be at risk, but ***do not*** provide information about the HIV/AIDS prevalence in your community.

Data Sources Included in the Profiles

We describe each of the data sets used in the profiles in this section. Extensive discussions of methods of estimation and adjustment are in the *Supplemental Information*. In the next section, you will find a table, *Summary of Strengths and Weaknesses of Data,* which may be useful to pull out of your notebook to look at as you read state and regional profiles.

General Population Estimates: The population and demographic data used in these profiles were compiled from the 1992 and 1995 estimated mid-year Texas resident county populations by race/ethnicity, sex, and age. The population estimates are produced by the Texas State Data Center (TSDC) at the Texas A&M University Department of Rural Sociology. We retrieved the estimates on 3-4-97 from the TDH EPIGRAM Mortality and Population Data Analysis Software. EPIGRAM was updated with the most current TSDC data as of January 1997.

The population of interest in these epidemiologic profiles is all adolescents and adults residing in Texas. Therefore, we present data only on persons aged 13 years or more, excluding those aged 0-12 years. The data were collapsed into the following age-groups: 13-19, 20-29, 30-39, and 40+. The racial/ethnic groups provided in this data set are African American, Hispanic, white, and *other* (persons of all other races, as one group.) The *other* racial/ethnic group is composed primarily of Native Americans, Asians, and Pacific Islanders.

1994 HIV Prevalence Estimates:

Why HIV Prevalence Estimates Are Done: Estimates of prevalence are important because prevalence, together with risky behavior, largely determines the likelihood of HIV transmission in a population. HIV prevalence almost always has to be estimated, not measured directly. The numbers shown in the profiles include people with AIDS and people with HIV who do not have AIDS.

What You Should Know About Prevalence: Prevalence is the number of infections in a population among those people *who have not recovered and who are living* at the time of interest. So, prevalence does **not** include those who have died or those who have recovered from the disease (although the latter is not yet a factor in HIV disease). Prevalence should be distinguished from incidence, which is the number of *new* cases of a disease during a defined period. HIV prevalence can rise either because there are more new infections (rising incidence) or because fewer are dying (declining mortality), or, both can affect prevalence at the same time. The reverse is true for falling HIV prevalence.

Data[1] Used for Estimates:

- 1994 Survey of Childbearing Women (SCBW)[2]
- AIDS cases diagnosed in 1994; database updated through 3/17/97
- AIDS OI living at the end of 1994; database updated through 3/17/97
- Population estimates for 1994; EPIGRAM as of 4/97

How HIV Prevalence is Estimated: No census of living people with HIV is available. No general population HIV seroprevalence surveys exist; all HIV seroprevalence studies are done on a limited sample which does not represent the general population. We used data from the 1994 Texas Survey of Childbearing Women (SCBW) as the foundation for estimates. The survey samples the broadest population of any of the HIV seroprevalence surveys, but it is limited to women who give birth.

[1]For the epidemiologic profiles, the 1994 SCBW tests and positives, the 1994 AIDS cases, and the 1994 population estimates for Hardin, Jefferson, and Orange Counties were shifted from PHR 5 to PHR 6.

[2]SCBW results for 1994 were used because the 1995 SCBW sample size was too small.

Limitations:

The *SCBW includes*:

- Only females
- of a limited age range (around age 15 to 44)
- who had a live birth
- and are Texas residents.

The SCBW *does not include*:

- HIV-infected males.
- Women who do not give birth. Some HIV-infected women choose not to become pregnant, some miscarry, some have abortions, and some are infertile.
- HIV-infected females who are very young or who are past the age of bearing children.
- Risk information.

Other Limitations:

- Women who give birth are a relatively low-prevalence sub-population, but their seroprevalence rates are used to estimate HIV prevalence for men (expected to have higher prevalence), boys, girls, infants, women who do not give birth, and older women.

Strengths:

- SCBW data are available for all areas of the state.
- SCBW data are not subject to self-selection bias.
- SCBW data are only minimally affected by variations in access to medical care.
- The methods used to estimate take the limitations into account and try to compensate for weaknesses.

For these reasons, the SCBW provides the best available basis for making estimates of HIV prevalence in the general population.

Methods developed by the CDC and presented in two documents[3] were adapted to produce Texas

[3]Simple Methods for Estimating HIV Prevalence and Projecting AIDS Trends, dated May 12, 1994, and Standard Protocol for Initial Needs Assessment Data Collection: Basis for a Community HIV Needs Assessment Process, Draft, September 5, 1995.

regional estimates. CDC developed the methods solely for use in areas with sufficient population and HIV prevalence to warrant their use. Extending them to areas with few residents and with low HIV prevalence may produce unreliable results. You can place more confidence in estimates for regions with moderate-to-high population levels and with moderate-to-high HIV prevalence levels. An extensive discussion of methods is in the *Supplemental Information*.

AIDS Case Reporting: When a person is diagnosed with AIDS, the diagnosing health care professional is required to report the AIDS case to the local public health authority. The case report then gets sent to the regional, state, and federal public health authorities. The health professional can delegate the task of reporting to a clerk or other staff. A copy of the reporting form can be found in the *Supplemental Information* section.

AIDS case information is gathered from the person's medical chart. Under some circumstances, the person filling out the form (the reporter) interviews the person with AIDS in order to obtain missing information. If the reporter leaves important fields blank, TDH makes an effort to find the information that was missing. This active follow-up is a major way in which AIDS surveillance differs from other more passive surveillance systems, such as CTS or HIV reporting. AIDS cases are reported by name. This helps TDH identify duplicate reports, enables accurate follow-up, and helps with referrals for treatment and services.

The case report also includes information on the case's demographics, facility of diagnosis, laboratory data, clinical status, treatment/services referrals, and behavioral history. The behavioral history section is what we use to determine mode of exposure. The reporter checks **all** of behaviors which the patient has engaged in within a certain time frame. Examples of risk behaviors include: had sex with a male, injected nonprescription drugs, received a blood transfusion, and had heterosexual relations with a person with AIDS or HIV.

Some cases only have one risk behavior, but many have multiple risks. In order to analyze data on people with multiple risk behaviors, the CDC has made a hierarchy of how likely certain activities are to transmit HIV. The hierarchy has weaknesses. For example, if a man had sex with another man once in 1978 and also has had heterosexual sex every week since 1990 with a woman known to have AIDS, the case is put into the male-to-male sex mode, not the risky heterosexual sex mode. Nonetheless, the hierarchy generally provides a useful and accurate method of analyzing all cases, including those with multiple risky behaviors.

In these profiles, we are only going to look at adult and adolescent AIDS cases. The possible modes for adults (older than 12 years of age) are: M/MS, M/MS/IDU, IDU, F/MS, hemophiliac, transfusion or transplant recipient, confirmed other, and risk not specified. We have grouped

hemophiliacs, transfusion or transplant recipients, confirmed others, and cases with unspecified risk into a general category named *Other*. Therefore, in this profile there are five modes of exposure: M/MS, M/MS/IDU, IDU, F/MS, and *Other*. Of those modes, we are going to focus on the first four.

While M/MS, M/MS/IDU, and IDU are self-explanatory, we should note that for a case to be in the F/MS category, that person must have had heterosexual sex with a defined list of risky sex partners and **not** have had male-to-male sex or have injected drugs. The list of risky heterosexual sex partners is:

- intravenous/injection drug user
- bisexual male
- person with hemophilia/coagulation disorder
- transfusion recipient with documented HIV infection
- transplant recipient with documented HIV infection
- person with AIDS or documented HIV infection, risk not specified

If the case has only had heterosexual sex with persons **not** on the above list, then that case is **not** included in the F/MS category.

Although AIDS case reporting represents infections occurring many years ago, the CDC Supplemental HIV/AIDS Study, in which people reported as AIDS cases were interviewed, found only one year between the first HIV *report* and the first AIDS report. HIV reporting previously had been assumed to be much more timely than AIDS reporting.

The lack of timeliness in HIV reporting systems was not due to a defect in the reporting systems. The lag was caused by the behavior of individuals. Many people with HIV did not get tested until they started to experience symptoms. Since they had not been tested earlier, they could not be reported earlier. If people continue to delay testing, the lag could make HIV reporting less useful to planners than previously had been assumed. Conversely, the 1993 AIDS case definition change tended to make the time interval between initial HIV infection and AIDS case report shorter, thus making current AIDS data somewhat more relevant to planners than it was before. However, new medications now available to HIV-infected patients delay the decline of CD4+ cells and may, therefore, delay the progression to an AIDS-defining condition. If fewer people with HIV come to have low CD4+ cell counts or they are able to avoid developing opportunistic illnesses in the near future, then fewer AIDS cases will be reported in the upcoming years.

HIV Infection Case Reporting: Since this is the first year that information on HIV infection reporting has been included in the epidemiologic profiles, a description of how HIV cases are reported and a summary of the strengths and weaknesses of the data are included here. Before 1994, confirmed HIV infections were reported anonymously, which means that cases were reported through the public health system with no identifiers of any kind attached to them. While reporting of this type may allow public health officials to make rough case counts, with an anonymous reporting system there is no way of knowing whether a report of infection is a new or a duplicate report.

In 1994, Texas physicians and laboratories began reporting confirmed HIV infections using a *unique identifier*, or UI for short. This system is very different from the reporting systems for AIDS and STDs, diseases which are reported using the name of the infected individual. The UI system was chosen as an experimental alternative to using named systems of surveillance; the UI is intended to protect the identity of infected individuals, while allowing surveillance personnel to remove duplicate reports of infection from the registry.

The UI is made up of four pieces of information about the individual:

- the last four digits of the social security number
- date of birth (dd/mm/yy)
- a code for sex
- a code for ethnicity.

In addition to the UI information, the zip code, city, and county of residence of the infected individual is requested. **No information on risk behaviors** is systematically collected on HIV cases.

While information on recently-discovered HIV infection is clearly the best data to use in prevention planning, there are some problems with using the data from the UI infection reporting system to represent recent infection in your region. The most serious of these has to do with report completeness. During the first three years of UI reporting, only **50%** of the HIV reports included all the information needed to create the UI, which meant that half the reports could not be used. This low level of completeness means that these data must be used with extreme caution.

Between 1994 and 1996, more than 20,000 reports of HIV infection were submitted to the central database in Austin, but after incomplete reports and duplicate reports were eliminated from consideration, only 8,228 reported cases of HIV remained. Among these reported cases, however, were HIV infections which had already progressed to AIDS. By matching UIs from the HIV database to similar numbers in the AIDS registry, HIV cases believed to have progressed to

AIDS were excluded from the HIV data used for this analysis. AIDS cases made up about 35% of the HIV data for the state as a whole, leaving a cumulative total of 5,159 cases of HIV infection not believed to have progressed to AIDS.

Information on HIV infection is intended to represent the *front end* of the epidemic, and even flawed HIV data can be used to supplement and temper the profile of infection found in AIDS data. Trends in AIDS data in Texas show that the epidemic is shifting: greater proportions of cases in women, in ethnic minorities, in heterosexual exposure categories are emerging. By comparing the demographic profile of HIV infection to that of recently diagnosed AIDS cases, shifts in age, sex, and race/ethnicity can be seen even more clearly.

In order to parallel the AIDS information, we have included information on HIV cases with **test dates in 1995** broken down by sex, race/ethnicity, and age categories[4]. Risk data are not included because they are not available. However, because of the problems with reporting completeness and underreporting, we will not use HIV case counts to calculate rates of infection, to make projections, or to give county-by-county counts of infection. Instead, we will try to give you an idea of how the profile of infected individuals may have shifted by comparing the profile of HIV cases with test dates in 1995 with the profile of AIDS cases diagnosed in 1995.

We have two final cautions about using HIV data. Keep in mind that just because someone first tested positive in 1995 does not mean that he/she was infected in 1995; a great proportion of Texas AIDS cases do not have their first positive test reported until they are diagnosed with AIDS. Secondly, no HIV reporting system, no matter how good it is, can give you information about people who do **not** test for HIV. These two factors make HIV reporting, whether by name or UI, a flawed measure of HIV incidence.

Estimates of Risk Populations: No one knows the exact size of the populations at increased risk of HIV infection. Using recently published methods, we arrived at a very general number for each risk population. A full description of the methods used and references is included in *Supplemental Information*. Even though the method and the data used for arriving at these estimates are flawed, estimates can still serve as guides. We used a combination of U.S. Census, CTS, and Texas Commission on Alcohol and Drug Abuse (TCADA) data, along with additional reference material to arrive at these figures. The **most important** fact to keep in mind when using the estimates is that the **number** of people in a high-risk population must be weighed along with the **intensity** of HIV infection in that population. Sheer numbers are not the sole consideration

[4]For 166 reports, full test date was not available. Date of entry into the surveillance system was used as a proxy for test date for purposes of inclusion in the data set, but not for calculation of age.

when targeting prevention. Targeting *smaller* risk populations with a *higher risk* of HIV infection may prevent more new infections than targeting a *larger* risk population with a *lower risk* of infection.

Texas Commission on Alcohol and Drug Abuse (TCADA) Client-Oriented Data Acquisition Process (CODAP), 1995*:* We extracted the tables in the *regional appendices* from TCADA data and arranged the tables by public health region. TCADA collects data on clients entering TCADA-funded substance abuse programs using the CODAP system. When a client is admitted to a treatment facility, the facility collects demographic and drug use information in the Admission Report. The Admission Report relies primarily on *self-report* by the client. The information in the tables is *adult* treatment data arrayed by the county where the client *received treatment*, not necessarily the county where the client *resides*. County-level and regional data often reflect where treatment was *available* rather than where the substance abuse *occurred*. The number of needle users was imputed from the total admissions and the percent reporting needle use. We also include a copy of TCADA's 1996 report called *Substance Abuse Trends in Texas: December 1996* in the *Supplemental Information*.

HIV Counseling and Testing (CTS): This system has been known by many names over the years: Counseling, Testing, Referral, and Partner Notification (CTRPN); Counseling, Testing, Reporting, and Partner Elicitation (CTRPE); and most currently Prevention Counseling and Partner Elicitation (PCPE). Although the name of the system has changed, the purple scan form used to record information about the client who is seeking counseling/testing has stayed the same. The information pulled off the scan forms is known as CTS data.

CTS data are very useful for understanding who is seeking testing and counseling services in your region in terms of demographics and fairly detailed risk information. Because HIV test results can be linked with the demographic and risk information, these data can also be used to profile some of the HIV infection in your region. The data can be used to give a more up-to-date picture of risk populations in your planning area.

What you will see in this report is the number of **tests reported** in your region in 1995. This means that clients who were counseled but not tested are excluded.[5] But keep in mind that the number of tests reported is not equal to the number of individuals testing, because the same person may test many times. While there is no sure way of removing duplicate client records, we removed test records of clients who told counselors that they had previously tested positive for HIV and who were found to actually be HIV-positive this time (some people get confused about previous results). This helps prevent CTS positivity rates from being misleadingly high due to repeat testing of people who have HIV but want their results reconfirmed. We also excluded the tests of those under the age of 13, those who tested but for whom no test result was reported, and those who were not Texas residents.

When you look at your profiles, here are a few things to remember about CTS data, especially how mode of exposure is assigned. Even though mode of exposure categories hide some risk behaviors, they do create a simple way to categorize CTS test records for the purposes of analysis: every record is sorted into just one mode.

Mode of exposure is a way of categorizing risk behaviors based on the likelihood of transmitting HIV while engaging in that behavior. During HIV counseling sessions, clients are asked about the kinds of risk behaviors they have engaged in since 1978. The counselor marks all applicable risk behaviors on the CTS form; these behaviors, in order of appearance on the form, are shown below.

Many clients talk about more than one risk behavior during a counseling session. Because some behaviors are riskier than others, and because we want each record to be counted only once, each CTS record is assigned to a mode of exposure category based on the riskiest recorded on the form. The modes of exposure in CTS data are shown below, in descending order of risk.

Once the forms are scanned in at TDH, records are assigned to mode of exposure categories by a computer program. This program does not erase risk information, it simply assigns a mode

Risk Behaviors in CTS Data

Sex with a male
Sex with a female
Used injecting drugs
Sex while using non-injecting drugs
Sex for drugs/money
STD diagnosis
Sexual relations with IDU
Sexual relations with a man who had sex with a man
Sexual relations with person with HIV/AIDS
Sexual relations with person with other HIV/AIDS risk
Child of a woman with HIV/AIDS
Hemophilia/Blood recipient
Health care exposure
Victim of sexual assault

[5]For the state as a whole, counseling only clients represent less than 3% of all CTS records.

of exposure which describes which client behavior was the **most** risky. Every record starts out assigned to the *Other* mode of exposure category (see the list of Risk Behaviors), regardless of the risk information included on the form. If none of the risk behavior categories are bubbled in, then the record is assigned to the *No Acknowledged Risk* mode of exposure, and that is where the record will stay. If only *Other* is bubbled in, the record stays in the *Other* mode of exposure category.

If there are any risk behaviors bubbled in, the computer program then goes up the hierarchical mode of exposure list, checking to see if the client had any risk behaviors which fit into that particular mode category. If the answer is yes, then the client record is temporarily placed in that mode of exposure category until it is determined whether or not any risk behaviors higher up in the hierarchy also describe their behavior. The program works its way up the mode of exposure hierarchy (from *Not Specified* to *M/MS/IDU, see the list of Mode of Exposure Categories*), reassigning client records to modes higher up the hierarchy if those risks are shown for the client. Here are some examples. If a man reports sex with men **and** injection drug use at any time since 1978, he will be placed in the mode of exposure category *M/MS/IDU*, no matter what other risks he has. If a man reports sex with other men, but no injection drug use, his mode of exposure category will be *M/MS,* even if he has traded sex for drugs or is bisexual. A woman who reports both sex with a bisexual man and crack use before sex would be placed in the *Sex partner at risk* mode--her substance use would not be apparent from looking at her mode of exposure category.

Mode of Exposure Categories

- M/MS IDU
- M/MS
- Heterosexual IDU
- Sex partner at risk
- Child of woman with HIV/AIDS
- STD diagnosis
- Sex for money or drugs
- Sex while using injecting drugs
- Hemophilia/blood recipient
- Victim of sexual assault
- Health care exposure
- No acknowledged risk
- Other
- Not specified

Also remember that not everyone who provides HIV testing services in your region sends in scan forms. The majority of the organizations that do send this information to the TDH are publicly funded, which means that the information you will see in this section does not give the whole picture of HIV testing and behavioral risk in your region. Although some private physicians and organizations voluntarily submit information about their clients, these providers are under-represented in these data. Another point to consider when looking at CTS data is that in different areas, HIV prevention contractors adopt different strategies to deliver HIV counseling and testing services and these different strategies may be reflected in these data.

STD Case Reporting: The STD surveillance system receives many reports each year. Health care professionals are required to report gonorrhea, syphilis, chlamydia, and chancroid to TDH. The health care professional may fill out the reporting form themselves, or they may designate someone else to complete the form.

Unlike AIDS reporting where one person is represented by only one case report, a single person may have multiple STD case reports. For example, if Jane was diagnosed with gonorrhea in January, her physician would send in a report. If Jane developed syphilis in July, her physician would send in a different, new report. If Jane contracted gonorrhea again in December, her physician would send in a third, separate report. Keep in mind that three case counts may not represent three separate people, but instead one person with three separate episodes.

Another thing to remember is that risk information is not reported with a STD diagnosis. Only basic demographic data, such as sex, age, and race/ethnicity, is reported to the STD surveillance system.

One of the reasons we include STD data is that research has shown that genital ulcer disease, such as syphilis, is an important cofactor in HIV transmission. A woman with genital ulcer disease is 10-50 times more likely than a woman without genital ulcer disease to transmit HIV to her male partner[6]. A man with genital ulcer disease is 50-300 times more likely than a man without genital ulcer disease to transmit HIV to his female partner. Although these studies were done in Africa, they have important ramifications for prevention in the U.S.

Non-ulcerative genital disease, such as gonorrhea, also increases the probability of transmitting HIV[7]. The local inflammation caused by the infection attracts T-cells, HIV's target, and may raise the probability of HIV transmission. Although most studies about how non-ulcerative genital disease affects HIV transmission also were done in Africa, they still have important messages for prevention in the U.S.

Another reason we include information on STDs is because it indicates the level of risky sexual behavior. Unprotected sex, especially in a context where HIV prevalence is substantial, raises the likelihood of becoming HIV infected. The more risky behavior, the more HIV prevalence, then the more risk of HIV infection.

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[6]R.J. Hayes, et al., "The Cofactor Effect of Genital Ulcers on the Per-Exposure Risk of HIV Transmission in Sub-Saharan Africa," *Journal of Tropical Medicine and Hygiene*, 98, 1995, p. 1.

[7]Marie Lage et al., "Non-Ulcerative Sexually Transmitted Diseases as Risk Factors for HIV-1 Transmission in Women: Results from a Cohort Study," *AIDS*, 7, 1993, 95.

In these profiles, we provide information on gonorrhea and on primary and secondary (P&S) syphilis, the most infectious form of syphilis. Information about both diseases will help you recognize which racial/ethnic and age groups have been putting themselves at increased risk of HIV transmission.

Seroprevalence Surveys at STD Clinics, Adolescent Clinics, and Drug Treatment Centers: These blinded surveys are limited in number and confined to large metropolitan areas.

STD Clinic Seroprevalence Data: A survey was conducted in 1995 in both Dallas and Harris Counties. The profile of clients seeking STD treatment is likely to differ considerably from the profile of the general population or from populations including all of those at increased risk of becoming infected with HIV. Therefore generalizations are difficult.

Adolescent Clinic Seroprevalence Data: A survey was conducted in 1995 in both Dallas and Harris Counties. These clinics primarily serve young women seeking prenatal care or family planning services.

Drug Treatment Center Seroprevalence Data: A survey was conducted in 1995 in Dallas County. The profile of clients entering drug treatment centers may differ from those who do not seek treatment. Therefore generalizations are difficult.

A copy of the findings is in the *Supplemental Information* and in the PHR 3 and PHR 6 profiles.

These unlinked or blinded surveys use excess sera from blood specimens drawn from patients for another purpose. For example, in STD clinics, the HIV seroprevalence surveys use sera left over after syphilis tests are completed. For the seroprevalence surveys, the clinic protects patient confidentiality by de-identifying all information about the specimen so that an HIV result cannot be linked back to an individual. The sera is then forwarded, along with demographic and limited risk information, for HIV testing. Blinded surveys are critical to epidemiologic monitoring of HIV because they remove a major source of bias present in test populations who seek HIV testing. Those seeking HIV testing may do so because they perceive themselves to be at increased risk. The biggest problem with seroprevalence surveys is that they only reflect the *prevalence of the group sampled*. The groups sampled are all limited in some way. Some are seeking treatment in public health clinics for medical conditions like STDs. Some are seeking treatment for substance abuse. Others are seeking prenatal care or family planning services. The groups sampled therefore cannot predict the prevalence of HIV in populations that need services or treatment but fail to seek them. Nor can they predict HIV prevalence in populations which do not seek treatment or services because they have no need for them.

Survey of Childbearing Women (SCBW): The TDH conducted the SCBW each year from 1988 through 1995. No SCBW was done in 1996, but one is being done in 1997. This survey of Texas resident women who delivered a live birth is the largest and least biased of all the HIV surveys conducted in Texas. The SCBW includes women of all races, ethnicities, and socioeconomic strata. However, the survey does not reflect HIV prevalence among *all* women because it is limited to women of childbearing age who delivered a live birth during the survey interval. Women who are unable or choose not to bear a child are not included. Unlike other seroprevalence surveys, which are limited in geographic area, the SCBW captures HIV seroprevalence data for all regions.

The SCBW, although not perhaps as immediately relevant to planning for targeting groups at increased risk as some of the other serosurveys, *is our best bellwether for the overall status of HIV in Texas*. Were these rates to suddenly increase and remain on the rise for more than one year, we would know to expect significant change in many aspects of the HIV epidemic in the state and be alerted to the possibility of spreading infection among bisexual men and among people who inject drugs. Additionally, this survey is extremely useful for estimating the size of newborn population born with HIV. Moreover, it provides the basis for estimates of HIV prevalence in the general population.

Summary of Strengths and Weaknesses of Data

Source of Information	Brief Description	Strengths	Limitations
AIDS Case Reporting System HARS is the CDC program set up for both AIDS and HIV reporting, but Texas only uses it for AIDS and pediatric HIV	The AIDS case reporting system monitors the incidence and demographic profile of AIDS and describes the modes of HIV exposure among people with A I D S .	•population-based. •active case finding. •risk information is available. •high completeness of reporting. •well distributed geographically. •statewide reporting and may be analyzed by region. •may be analyzed by year of diagnosis or report. •collected in a way that makes it comparable across all areas of the nation.	•progression to AIDS takes years, so information is outdated in terms of HIV infection.
STD Case Reporting System Software is SHARES system. Plans underway to convert to STD-MIS software.	This is the most accurate and reliable source of information on sexually transmitted diseases. This includes information on syphilis, chlamydia, gonorrhea, and pelvic inflammatory disease (PID). Syphilis is pursued more vigorously than other STDs.	•historical data for trend analysis. •indicates that risky behavior has taken place but does not specify the behavior. •data may be more timely than AIDS •statewide reporting. •STDs increase risk of co-infection.	•not directly related to HIV exposure. •individuals may have multiple risks. •overrepresents people diagnosed at public providers. •completeness of report up to the provider.

Summary of Strengths and Weaknesses of Data

Source of Information	Brief Description	Strengths	Limitations
HIV Counseling and Testing System (CTS) CDC-sponsored CTS data system software.	This information derives from specific interviews with clients who have come in for HIV counseling. Risk behaviors since 1978 mentioned by the client are noted and using a CDC system, a mode of exposure is determined by highest risk for each client.	•provides behavioral risk information. •information is gathered on a case-by-case basis, not as an aggregate data set, so it can be analyzed in many more ways than other prevention data collection systems. •assignment of individuals to risk group(s) and mode. •can be shown by mode of exposure and by risk. •has information available so rates can be calculated.	•self-reporting of risk. •mostly public sector reporting. •considerable reporting delay. •geographic distribution may be biased by location of testing facilities •insufficient standardization of risk assessment and reporting. •information on risk behavior does not take into account how often or how recently the behavior occurred.
Survey of Childbearing Women CDC-sponsored HFS software	This survey examines the HIV seroprevalence for women who have given live birth in Texas. Newborn heel-stick blood specimens are collected at birth that provide the HIV status of the mother at the time of delivery. Used for HIV prevalence estimates.	•all women who gave live birth in a medical facility or clinic. •historical data for trend analysis. •statewide reporting so can be presented at the regional level. •very complete. •gives trends in HIV prevalence of mothers.	•only women who gave birth--generalization to non-childbearing women or men is tricky. •no behavioral information. •sample size is large but HIV prevalence may be low for this group. (Do not confuse with HIV incidence.)

Summary of Strengths and Weaknesses of Data

Source of Information	Brief Description	Strengths	Limitations
Unlinked or Blinded Seroprevalence Surveys Data are collected using the HIV Family of Surveys (HFS) data system provided by CDC	This information comes from various women's clinics, STD clinics, drug treatment centers, TB clinics, adolescent clinics and shelters, criminal justice, and state psychiatric hospitals. Data are limited, depending on source, but may include STD information. Information comes from various sources and may differ in item completeness by source. Uses left-over blood collected for various purposes not directly related to HIV/AIDS at particular clinical settings	•provides very limited behavioral information. •addresses STDs. •samples all individuals in the venues who meet the guidelines, so is not biased by HIV test-seeking behaviors. •gives a part of the demographic picture of HIV prevalence. This is important because it takes both risky behavior and prevalence to transmit HIV. •more recent information than provided by AIDS Patient Database.	•limited to time of testing. •limited demographic information. •limited to clinic or treatment populations in selected geographic areas. •surveys for all of these venues are not available for each year. The profiles will include STD clinic, drug treatment, and adolescent surveys for 1995. •not representative of the general population. •only limited additional information exists.
General Population: Census Data and Population Estimates Software is EPIGRAM	Demographic, socioeconomic and ethnicity data for each region are gathered through the US 1990 census. We are also fortunate to have a yearly update of this census data provided by Texas A&M which provides better estimates of current information than the 1990 census.	•population-based method with correction for under-reported populations. •good for identifying geographic distributions.	•updates are based on smaller sample sizes.

Summary of Strengths and Weaknesses of Data

Source of Information	Brief Description	Strengths	Limitations
HIV Reporting System Reports are accepted both electronically (HARS) or via paper reports.	This system uses unique identifiers to report HIV information on those age 13 or older. Incomplete reports are not included as *cases* since the unique identifier system requires reporting of last 4 digits of their social security number, date of birth, racial/ethnic group, and sex.	•is supposed to indicate newer HIV infections. •dual reporting (lab and provider). •augments AIDS case data. •provides descriptive information (age, sex, ethnicity). •able to eliminate most duplicate reports.	•badly underreported due to report incompleteness--demographic and geographic information may be biased. •started only in March 1994. •the absence of names makes it very difficult to pursue items left blank. •UI system unique--cannot be compared to HIV reporting data from other areas using named HIV reporting. •cannot follow progression of HIV disease. •misses HIV infection in those who have not tested.
Estimates of Populations at Increased Risk	Estimates of the 3 populations most closely related to the BDTPs are based on data from multiple sources including: Census, CTS, Texas Commission on Alcohol and Drug Abuse.	•provides a rough estimate of the populations with elevated risks of becoming HIV infected. •uses and compares multiple sources of data to arrive at final estimates. •different methods were tested and compared to one another.	•methods for estimates are new and not fully validated. •the estimates cannot be stratified into demographic groups, only a lump total is possible. •the methods rely on extensive extrapolation and make broad assumptions.

Summary of Strengths and Weaknesses of Data

Source of Information	Brief Description	Strengths	Limitations
HIV Prevalence Estimates	Estimates the numbers and rates of HIV prevalence in the general population as of 1994. SCBW, population estimates, and AIDS case proportions are used. Methods were adapted loosely from CDC methods. HIV prevalence estimates are important for planning purposes because total risk of HIV infection is largely determined both by the existence of HIV in a community and by the level of risk behaviors practiced by those in the community.	•gives general idea of levels of HIV prevalence (existing HIV infections) in the regions and in the state as of 1994.	•does not give you an idea of the level of HIV prevalence in populations at increased risk for acquiring HIV. •not available for 1995. •estimates are less reliable for low-population regions and for low-prevalence regions.
TB Infection Information **Appendix Only**	This source provides information on populations infected with TB. This source provides indirect information about HIV. Unlike STD data, TB data has less relevance to HIV transmission and risk behavior.	•provides demographic and geographic information on TB.	•not directly related to HIV transmission. •has limited use in targeting populations at risk for HIV infection.

Summary of Strengths and Weaknesses of Data			
Source of Information	**Brief Description**	**Strengths**	**Limitations**
TCADA Data **Appendix Only**	Database of information provided by the Texas Commission on Alcohol and Drug Abuse on the new entrants into drug treatment centers.	•provides demographic and geographic (mostly by county of treatment) information. •limited data available by zip code of residence in 1996. •provides information on injection drug use of clients admitted.	•only indicates populations that *may* be at risk for HIV infection; does not provide direct information on individual risk or HIV/AIDS data. •starting in 1996, data on those receiving treatment from the prison system was no longer collected. •data is from public sector treatment facilities. •number treated limited by available treatment slots.
Behavioral Risk Factor Surveillance System (BRFSS) **Supplemental Information Only**	This system collects information about demographics, SES, condom use, knowledge about HIV, attitudes towards people with HIV, attitudes toward HIV education, testing habits, and limited information on changes in sexual behavior. The data are collected by telephone and thus may not reach many of the at risk populations. This survey is also long and requires extensive time to complete.	•provides minimal basic behavioral information related to HIV. •has a core set of questions on HIV knowledge, attitudes, behaviors, and HIV testing patterns. •incorporates economic status and ethnic information. •provides population-based information on the state. •national database available for purposes of comparison.	•questions are general. •the full sexual behavior module is not currently used in Texas (although it is likely to be employed in the near future). •limited to households with phones. •does not specifically target high risk groups. •no adolescent information (Texas does not conduct the Youth Behavioral Risk Survey due to Texas Education Agency decision). •currently has limited use in targeting populations at risk for HIV infection. •several years of data must be collected before we have enough information for *regional* profiles.

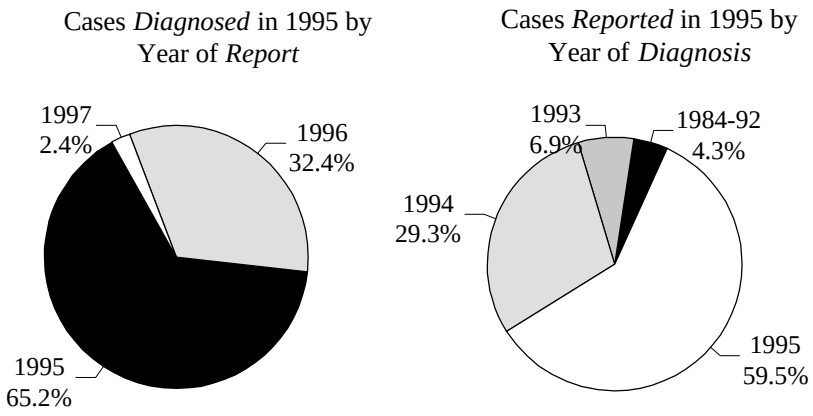
AIDS TRENDS IN TEXAS

A Cautionary Note: Do not compare this year's AIDS case analyses to those in the previous epidemiologic profiles. The previous profiles were analyzed by year of *report*; the current profiles are analyzed by year of *diagnosis*, adjusted for reporting delay.

Trends in Texas Diagnosed AIDS Cases

AIDS case reporting provides the most comprehensive view of HIV. Because it is relatively complete, has been collected longer than other HIV-related data, and includes so much information, it is the starting point for any epidemiologic profile.

Figure 1. AIDS Case Reporting Delay: Texas, 1995



AIDS database updated through 3/17/97

In the state and regional profiles, information will be presented in terms of AIDS cases by year of diagnosis, a change from the previous profiles. Year of diagnosis is preferable to year of report because the time of report is heavily influenced by reporting artifacts (for example, a turnover in employees among the staff of a reporting source or a bottleneck created by software problems).

The only drawback to using AIDS cases by year of diagnosis is the difficulty of adjusting for delays in reporting (Figure 1). Until this year, we had a method to adjust for reporting delay only at the state level. For the current epidemiologic profiles, this capacity was extended to the regional level, so all AIDS cases by year of diagnosis in this report have been adjusted.

Why We Look at Trends:

- Trends are ***useful in understanding disease patterns*** and how they ***change over time***.

- ***The trends shown here illustrate three measures*** which are used over and over again in epidemiologic analyses: *case counts, case proportions or shares,* and *case rates*. Each kind of information can be useful when planning prevention activities.

Trends in Texas Diagnosed AIDS Cases by Race and Ethnicity

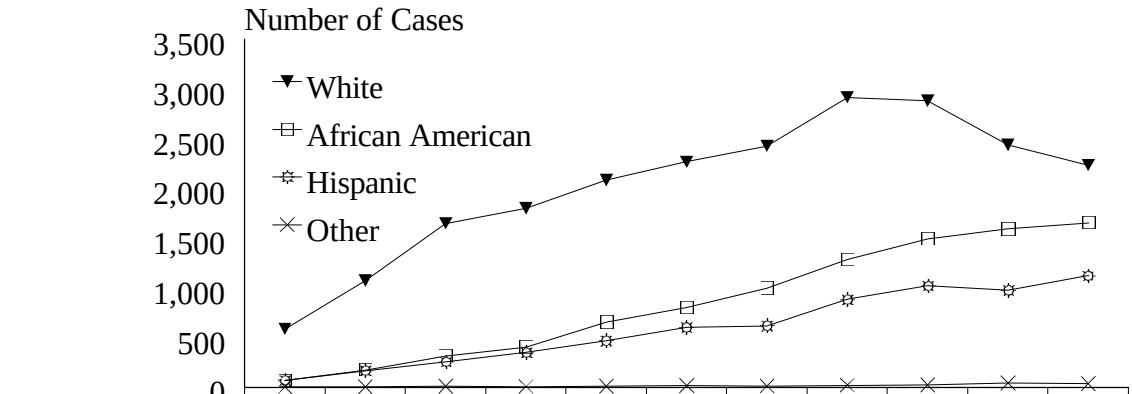
Case Counts: Figure 2 shows the number of AIDS cases diagnosed in Texas from 1985 through 1995 for whites, African Americans, Hispanics, and all other racial and ethnic groups combined. AIDS counts show the *amount or total magnitude* of advanced HIV disease in different groups (although AIDS cases reflect HIV infections occurring several years before).

- Note that the graph says that the cases have been *adjusted for delays in reporting*. This means that, in some respects, the counts have become estimates of what we *think* the number of diagnosed cases will be--once all of them that are *going to be* reported *are* reported. If you want to know more about the adjustments, an explanation is in the *Supplemental Information*.

- In some other reports, you may see AIDS cases adjusted for those cases that will *never be reported*. We do not do this. We think Texas AIDS reporting is very complete compared to reports of many other diseases and compared to HIV reporting. But, we do not know the *proportion* of AIDS cases that are *never* reported, so we have not attempted to adjust upwards for incomplete reporting.

- We show the date we obtained an AIDS data set for analysis. The date is useful if you want to ask for more AIDS data. The AIDS registry is continuously updated. Some people want information from the database as of the date of *the data they already have* (so it will match for comparative purposes). Others want *updated* information, but they need to know about the dates, since, due to the continuous updating, the two sets of numbers may not correspond perfectly.

Figure 2. AIDS Case Counts by Year of Diagnosis and Race/Ethnicity: Texas, 1985-1995



	85	86	87	88	89	90	91	92	93	94	95
White	**585**	**1,070**	**1,646**	**1,799**	**2,083**	**2,268**	**2,426**	**2,915**	**2,882**	**2,438**	**2,234**
African American	**69**	**171**	**313**	**401**	**652**	**801**	**998**	**1,283**	**1,491**	**1,592**	**1,653**
Hispanic	**71**	**164**	**253**	**351**	**470**	**600**	**618**	**885**	**1,019**	**974**	**1,122**
Other	**2**	**3**	**9**	**6**	**8**	**15**	**12**	**20**	**22**	**40**	**35**

Year of Diagnosis

Adjusted for reporting delay; AIDS database updated through 2/13/97

- The trend of *case counts* was upwards for all groups (except for whites after 1993), reflecting the toll of AIDS in the state.

- One striking feature of the trends was that far more AIDS cases were diagnosed among whites than among African Americans, Hispanics, or *Other* races and ethnicities.

- Figure 2 also shows that, although white cases remained higher, minority cases were rising.

- AIDS cases diagnosed among whites declined after 1993, and by 1995 *case counts* of AIDS diagnosed among whites had fallen to 1990 levels.

- Knowing the magnitude of disease is important for prevention efforts. If we used AIDS case reporting alone, we would conclude from Figure 2 that the largest number of HIV infections to be prevented were likely to be among whites. (The same principle would hold true if you were looking other groupings like modes of exposure or geographic areas).

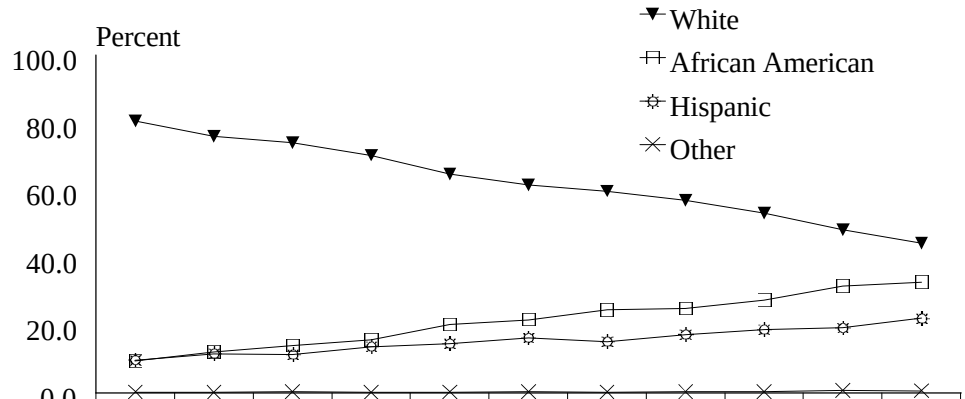
- In 1993, the AIDS case definition changed to include cases with CD4+ counts fewer than 200 per microliter of blood. On average, this meant that for cases diagnosed since 1992, less time elapsed between HIV infection and AIDS diagnosis. For this reason, the definition change made current AIDS cases more relevant to HIV infection patterns than they were previously and thus made them more relevant to planners.

- However, in the future, as more people respond to the new drugs to fight HIV, fewer people may reach the point of having low CD4+ cell counts, so fewer AIDS cases may be reported.

- AIDS counts are affected by changes in the case definition and by changes in treatments. For example, part of the increase you see in Figure 2 is due to the definition being expanded to include more people.

Case Proportions or Shares: Figure 3 uses the same data used in Figure 2, but shows it in a different way: race/ethnicity groups are now viewed by the *proportion or share* they contributed to total diagnosed AIDS cases for the year. This view gives a better picture of the *shifting patterns* of HIV infection.

Figure 3. AIDS Case Percent Shares by Year of Diagnosis and Race /Ethnicity: Texas, 1985-1995



	85	86	87	88	89	90	91	92	93	94	95
White	**80.5**	**76.0**	**74.1**	**70.4**	**64.8**	**61.6**	**59.8**	**57.1**	**53.2**	**48.3**	**44.3**
African American	**9.5**	**12.1**	**14.1**	**15.7**	**20.3**	**21.7**	**24.6**	**25.1**	**27.5**	**31.6**	**32.8**
Hispanic	**9.8**	**11.6**	**11.4**	**13.7**	**14.6**	**16.3**	**15.2**	**17.3**	**18.8**	**19.3**	**22.2**
Other	**0.3**	**0.2**	**0.4**	**0.2**	**0.3**	**0.4**	**0.3**	**0.4**	**0.4**	**0.8**	**0.7**

Year of Diagnosis

Adjusted for reporting delay; AIDS database updated through 2/13/97

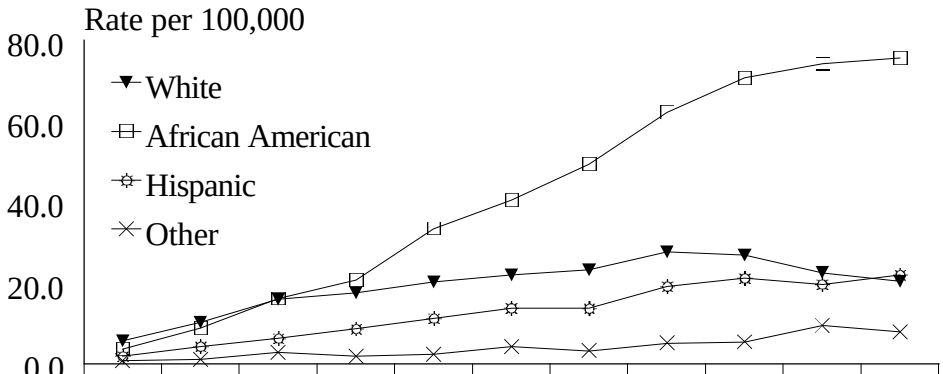
- The trend in case counts was upwards for all groups (except whites after 1993). The trend in *proportions* shows that whites have come to constitute a smaller and smaller share of all AIDS cases, and minority cases have come to constitute a larger and larger share.

- In 1985, whites accounted for the largest proportion of total AIDS cases (81%). By 1995 whites accounted for only 44% of the total AIDS cases.

- In terms of prevention efforts, this gives an idea of *where the burden of HIV infection is likely to head in the future*.

Case Rates: Figure 4 shows Texas race/ethnicity groups' AIDS *case rates* for the years 1985 through 1995. These data differ from Figure 2 in that the yearly count of AIDS cases in a group is divided by the yearly estimated population of the group, then the decimal fraction that results is multiplied times 100,000. The rate is a measure of the *intensity of the disease in that specific population*.

Figure 4. AIDS Case Rates by Year of Diagnosis and Race /Ethnicity: Texas, 1985-1995



	85	86	87	88	89	90	91	92	93	94	95
White	**5.7**	**10.3**	**15.9**	**17.5**	**20.2**	**22.0**	**23.2**	**27.6**	**26.9**	**22.5**	**20.4**
African American	**3.6**	**8.8**	**16.1**	**20.7**	**33.4**	**40.4**	**49.3**	**62.2**	**70.7**	**74.2**	**75.6**
Hispanic	**1.9**	**4.2**	**6.3**	**8.6**	**11.2**	**13.8**	**13.7**	**19.1**	**21.2**	**19.6**	**21.9**
Other	**0.7**	**1.0**	**2.8**	**1.8**	**2.3**	**4.2**	**3.2**	**5.1**	**5.4**	**9.4**	**7.9**

Year of Diagnosis

Adjusted for reporting delay; AIDS database updated through 2/13/97

Disease Patterns:

- Although whites accounted for the largest number of cases (Figure 2), the AIDS *case rates* in Figure 4 showed a different picture.

- AIDS was less intense in the white general population than it was in the African American general population.

- Beginning in 1988, the African American rate exceeded the rate of all other groups and it rose steeply thereafter. By 1995, the African American rate was over 3 times as high as the white rate.

- The white case rate, already much lower than that of African Americans, declined after 1993 and by 1995 had fallen slightly below the case rate for Hispanics.

- Among people of *Other/Unknown* races and ethnicities, annual case rates were low but generally rising (although the rate for 1995 fell below the 1994 level).

Why We Need Denominators:

- Dividing the number of cases by the population at risk is what gives you an idea of how intense the disease is in different groups.

- To calculate case rates, the denominators of preference would be population *counts* of those who practice risky behaviors that might lead to HIV infection. However, counting people who inject drugs or have risky sex is not feasible.

- For this reason, to calculate AIDS case rates by mode of exposure, we either have to substitute something else (like census data on males and females), or simply not do case rates by mode of exposure.

The Need for General Population Estimates:

- The national census is taken only once a decade; it does not provide counts of the general population for the years between 1980 and 1990 or 1990 and 2000. To present *trends* in rates, we had to have population *estimates*.

- The population estimates have numbers for only 4 race/ethnicity groups: whites, African Americans, Hispanics, and *Other* races and ethnicities combined. For this reason, the profiles use these four categories of race/ethnicity.

The Need for Estimates of Populations at Increased Risk of HIV-Infection:

- We developed 1995 population estimates for populations at increased risk of becoming HIV infected. We used novel methods not yet tested by time, peer review, or validation studies. The estimates should be viewed as a first attempt. We wanted to provide crucial pieces of previously missing information which might be useful to community planners. An explanation of methods is in the *Supplemental Information*.

- The estimates *are available only for 1995*, so they cannot be used as the denominators for trend analysis. We did not attempt to break them down by race/ethnicity, age, or sex.

Using Rates for Planning:

- If disease rates are high in a population, you may conclude that the problem is severe and needs attention. However, you must come to this conclusion only after looking at the size of the numbers in the numerator and denominator. If either is small, you might have reservations about your conclusion.

- For example, if there are only 25 people in the denominator and only one case in the numerator, you have to ask yourself two questions.

  Is this one of those situations where one case (the numerator) appears in a sporadic fashion, driving the rate up this year, only to revert to zero for years thereafter?

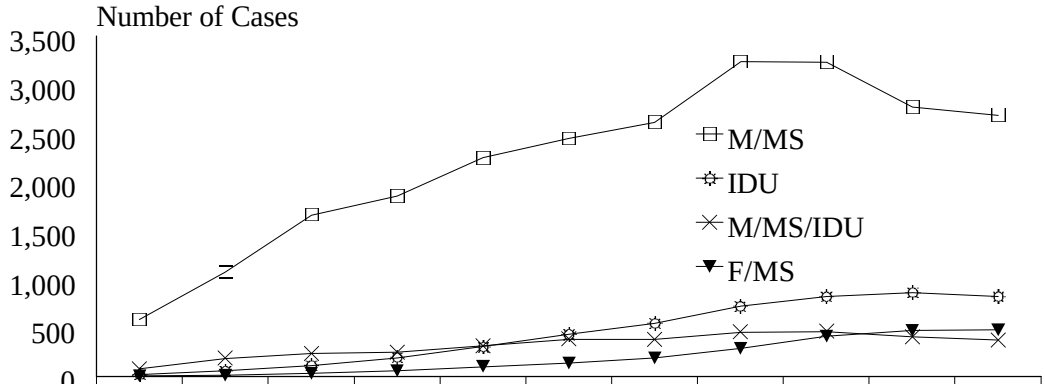
  If there are only 25 people in this group (the denominator), even if rates are consistently high, does it make sense to expend limited funds try to locate the 25 people out a population of 200,000 in order to target them with prevention?

Of course, decisions about which groups to target are much more complex than this simple epidemiologic lesson would indicate. Community planners must have more specific information than just AIDS trends in general population race/ethnicity groups. Such information might be on modes of exposure, risk behaviors, geography, age, sex, attitudes, knowledge, and beliefs; it would include information from a vast array of different data sets, not just AIDS case reporting.

Trends in Texas Diagnosed AIDS Cases by Mode of Exposure

Case Counts: Figure 5 shows trends in AIDS *case counts* by the 4 modes of exposure most related to the BDTPs.

Figure 5. AIDS Case Counts by Year of Diagnosis and Mode of Exposure: Texas, 1985-1995



	85	86	87	88	89	90	91	92	93	94	95
M/MS	**583**	**1,072**	**1,662**	**1,854**	**2,250**	**2,447**	**2,617**	**3,241**	**3,235**	**2,769**	**2,689**
IDU	**20**	**57**	**112**	**193**	**307**	**432**	**548**	**726**	**821**	**862**	**822**
M/MS/IDU	**77**	**186**	**237**	**251**	**317**	**385**	**382**	**458**	**463**	**407**	**374**
F/MS	**4**	**13**	**31**	**58**	**102**	**138**	**188**	**289**	**415**	**472**	**478**

Year of Diagnosis

Adjusted for reporting delay; AIDS database updated through 2/13/97;
BDTP-related modes only

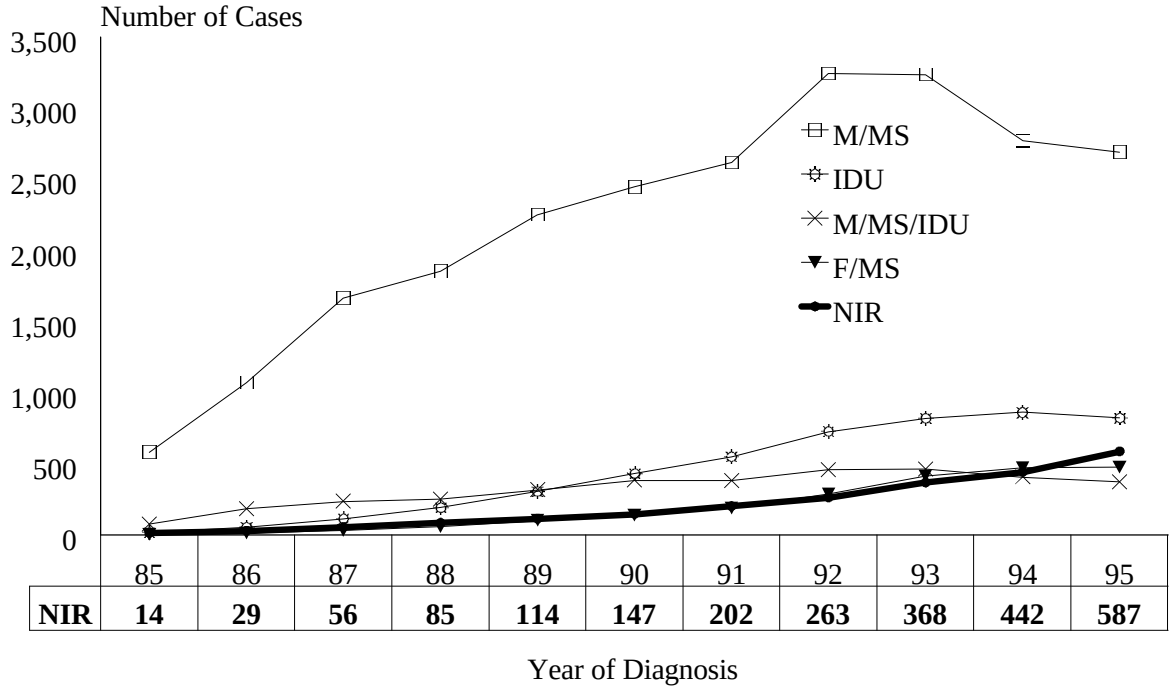
- The counts attributed to M/MS by far outdistanced the counts attributed to all of the other BDTP-related modes of exposure combined.

- AIDS diagnoses among M/MS reached a peak in 1992, leveled in 1993, and then declined subsequently. Case counts for M/MS/IDU followed a similar course, but at a lower level of magnitude.

- Also at a lower level, case counts for IDUs peaked in 1994 and appeared to decline slightly in 1995. AIDS diagnoses attributed to F/MS continued to rise through 1995.

Investigation of Cases with No Identified Risk: Figure 6 illustrates a problem. The graph is similar to the last graph, but note the addition of the heavy line.

Figure 6. AIDS Case Counts by Year of Diagnosis and Mode of Exposure: Texas, 1985-1995



	85	86	87	88	89	90	91	92	93	94	95
NIR	**14**	**29**	**56**	**85**	**114**	**147**	**202**	**263**	**368**	**442**	**587**

Year of Diagnosis

Adjusted for delays in reporting; AIDS database updated through 2/13/97; BDTP-related modes of exposure only

- The heavy line shows the case counts for the *No Identified Risk (NIR)* mode of exposure. These counts *almost always* rise over time and usually the rise is an artifact. The anomaly arises when a case is initially reported with no known risk. *It takes time to investigate the case to determine what the risk was*.

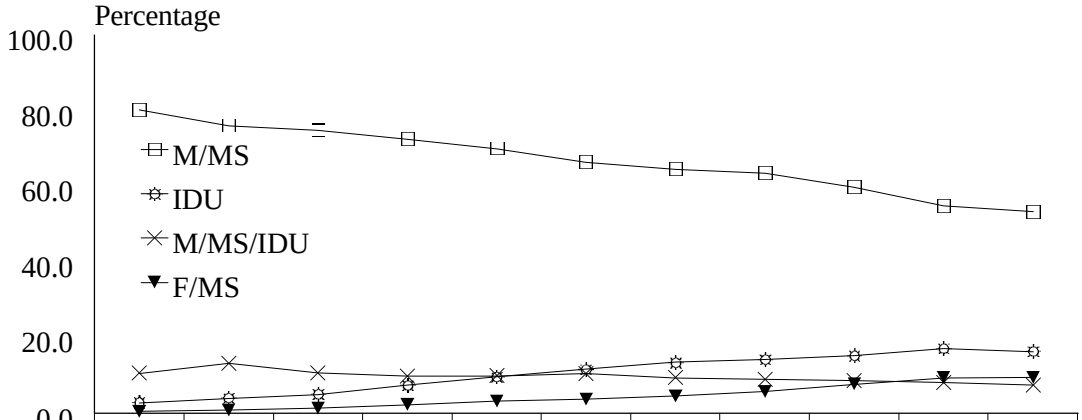
- On average, there has been less time to investigate missing risk for a case diagnosed in 1995 than for a similar case diagnosed in 1994. The difference in time for investigation makes the graph incorrectly look *as if* the incidence of AIDS cases with no identified risk is rising. As time goes on, the likelihood of finding the missing risk information increases.

- This creates a problem interpreting recent AIDS information. We know that many of the *NIR* cases eventually will be redistributed into one of the 4 modes of exposure most closely related to the BDTPs.

- The large number of cases in the M/MS makes it unlikely that redistribution of NIR cases will greatly affect the numbers shown here. The small decline in 1995 IDU cases *could be* affected by redistribution and may prove in the end to remain level with 1994 or even to increase slightly.

Case Proportions or Shares: Figure 7 shows the share of total AIDS cases attributed to the different modes of exposure.

Figure 7. AIDS Case Shares by Year of Diagnosis and Mode of Exposure: Texas, 1985-1995



	85	86	87	88	89	90	91	92	93	94	95
M/MS	**80.2**	**76.1**	**74.8**	**72.5**	**70.0**	**66.4**	**64.6**	**63.5**	**59.8**	**54.9**	**53.3**
IDU	**2.8**	**4.0**	**5.0**	**7.5**	**9.6**	**11.7**	**13.5**	**14.2**	**15.2**	**17.1**	**16.3**
M/MS/IDU	**10.6**	**13.2**	**10.7**	**9.8**	**9.9**	**10.5**	**9.4**	**9.0**	**8.6**	**8.1**	**7.4**
F/MS	**0.6**	**0.9**	**1.4**	**2.3**	**3.2**	**3.7**	**4.6**	**5.7**	**7.7**	**9.4**	**9.5**

Adjusted for reporting delay; AIDS database updated through 2/13/97;
BDTP-related modes of exposure only

- In 1985, M/MS cases constituted 80% of all cases. By 1995 that share had fallen to 53%.

- Similarly, M/MS/IDU went from a 1986 high of 13% to a 1995 low of 7%.

- Conversely, IDU and F/MS percentages became larger over the years.

- In 1985, IDU cases accounted for only 3% of the total AIDS cases; by 1995 that share had increased to 16%. The 1995 percentage is likely to rise as NIR cases are redistributed.

- In 1985, F/MS AIDS cases claimed less than 1% of all cases; by 1995, F/MS accounted for 10% of the total Texas AIDS cases.